

LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA
CONCEPTUAL/FINAL DEVELOPMENT PLAN

RECEIVED
Department of Planning & Zoning
MAR 14 2011
Zoning Evaluation Division

OWNER:	APPLICANT:
RICH DANIEL J. 12307 CHARLES LACEY DR. MANASSAS, VA 20112	STEVEN M. BALDWIN 13501 CAVANAUGH DRIVE ROCKVILLE, MD 20850

2. THE PROPERTY SHOWN ON THIS PLAN IS IDENTIFIED ON THE FAIRFAX COUNTY ZONING MAP AS 91-3-G-0007, AND IS ZONED R-1. THE PROPERTY IS APPROXIMATELY ±171,979 SQUARE FEET OR 3.9481 ACRES.

3. THE SITE IS CURRENTLY ZONED R-1, RESIDENTIAL DISTRICT. THIS REZONING APPLICATION REQUESTS THE SITE BE REZONED TO PDH-4, PLANNED DEVELOPMENT HOUSING DISTRICT, FOUR (4) DWELLING UNITS PER ACRE.

4. THE PROPOSED DEVELOPMENT WILL MEET THE PARKING REQUIREMENTS OF ARTICLE 11 OF THE ZONING ORDINANCE. PARKING WILL BE PROVIDED BY A COMBINATION OF PROPOSED GARAGE, DRIVEWAY, AND SURFACE SPACES.

5. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS FROM FIELD RUN AND AERIAL SURVEY BY WALTER L. PHILLIPS, INC. CONTOUR INTERVAL IS TWO (2) FEET.

6. THE PROPOSED DEVELOPMENT IS LOCATED ADJACENT TO AN EXISTING CHURCH PROPERTY ZONED R-1 TO THE EAST. ADJACENT PROPERTIES TO THE NORTH, SOUTH, AND WEST ARE ALL ZONED PDH-4. THE PROPOSED DEVELOPMENT IS COMPATIBLE WITH SURROUNDING LAND AND WILL NOT POSE ANY ADVERSE IMPACTS TO ADJACENT OR NEIGHBORING PROPERTIES.

7. IT IS ANTICIPATED THAT DEVELOPMENT OF THIS PROJECT WILL OCCUR IMMEDIATELY FOLLOWING COUNTY APPROVAL OF THE SITE PLAN.

8. AN AMENITY AREA IS PROPOSED WITH THIS DEVELOPMENT AS SHOWN ON THE DEVELOPMENT PLAN. THE AMENITY AREA SHALL INCLUDE A MINIMUM OF:

- 2 PICNIC TABLES
- 1 GRILL
- 2 BENCHES
- 1 CLIMBING PLAYSET

9. THE SITE IS SERVED BY PUBLIC WATER AND SEWER. PROPOSED SANITARY SEWER AND WATER IMPROVEMENTS WILL BE CONSTRUCTED WITH THE PROJECT.

10. THERE IS A RESOURCE PROTECTION AREA DELINEATED ON A PORTION OF THE PROPERTY. A SITE-SPECIFIC RPA DELINEATION HAS BEEN PERFORMED AND THE RESULTS ARE SHOWN ON THIS PLAN.

11. THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR FAIRFAX COUNTY, VIRGINIA, MAP NUMBER 515525 0128 D, REVISED DATE MARCH 5, 1990 DESIGNATES THE PROPERTY AS BEING IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.

12. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THE SITE.

13. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THE PROPERTY.

14. THIS PROPOSED DEVELOPMENT COMPLIES WITH THE CURRENT COMPREHENSIVE PLAN RECOMMENDATION.

15. THE PROPOSED APPLICATION CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS, EXCEPT AS NOTED WAIVERS/MODIFICATIONS SECTION.

16. ALL EXISTING STRUCTURES ONSITE ARE TO BE REMOVED.

17. THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING, AND MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED, AND ARE PERMITTED PURSUANT TO ZONING ORDINANCE SECTION 1B-204(5), AS PART OF THE FINAL DESIGN AND SITE PLAN APPROVAL PROCESS; HOWEVER, THE FINAL CONSTRUCTION DRAWINGS SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THIS PLAN.

18. THERE WILL BE A MINIMUM OF 200 SQUARE FEET DESIGNATED AS A PRIVACY YARD ON EACH LOT.

19. ALL COMMON AREAS SHALL BE CONVEYED TO THE HOMEOWNERS ASSOCIATION, WHICH SHALL BE RESPONSIBLE FOR ITS MAINTENANCE.

20. ALL RETAINING WALLS SHALL HAVE A MAXIMUM HEIGHT OF 2-FEET.

EXISTING ZONE: R-1, RESIDENTIAL DISTRICT, 1 DU/AC
PROPOSED ZONE: PDH-4, PLANNED DEVELOPMENT HOUSING DISTRICT, 4 DWELLING UNITS PER ACRE
TOTAL SITE AREA: ±171,979 SF OR ±3.9481 AC

	<u>REQUIRED</u>	<u>PROVIDED</u>
MIN DISTRICT SIZE	2.0 AC	3.95 AC
MIN LOT AREA	NO REQUIREMENT	±4,140 SF OR ±0.095 AC
MIN LOT WIDTH	NO REQUIREMENT	±45 FT
MAX BLD HT	35 FT	MAX. 38 FT
MIN YARD REQUIREMENTS		
FRONT	NO REQUIREMENT	±16 FT (HOUSE)
SIDE	NO REQUIREMENT	N/A
REAR	NO REQUIREMENT	±11 FT (HOUSE) ±5 FT (DECK)
MAX FAR	4 DU/AC	±2.53 DU/AC
OPEN SPACE	20%	±25%

REQUIRED PARKING

USE: DWELLING, SINGLE FAMILY DETACHED (FRONTING PRIVATE STREET)
RATE: THREE (3) SPACES PER UNIT

10 UNITS = 30 SPACES

TOTAL PARKING REQUIRED = 30 SPACES

PROPOSED PARKING

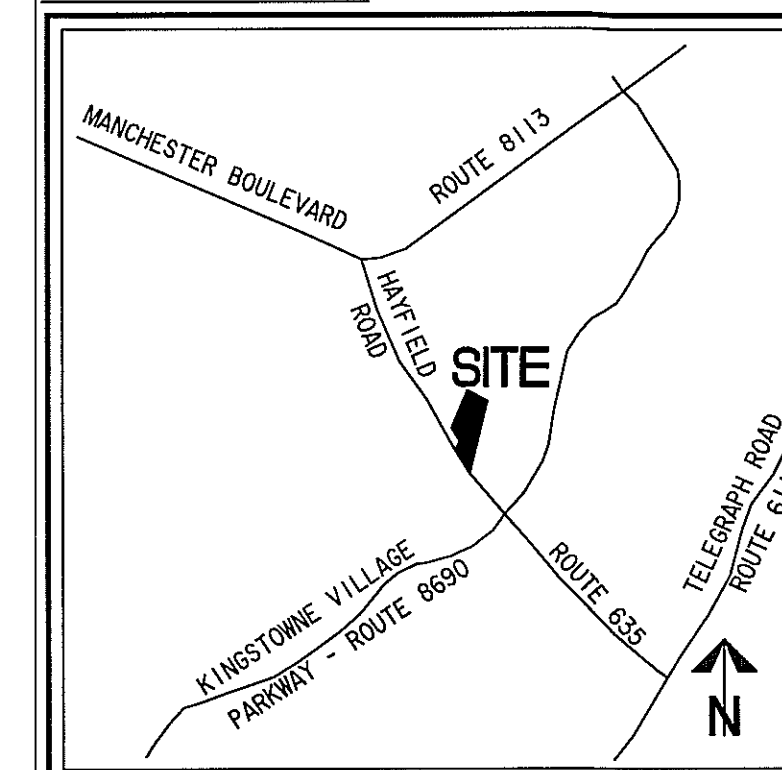
10 UNITS WITH 2 GARAGE SPACES = 20 SPACES
10 UNITS WITH 2 DRIVEWAY SPACES = 20 SPACES
10 VISITOR SPACES = 10 SPACES

PARKING PROVIDED = 50 PARKING SPACES (>30 REQUIRED)

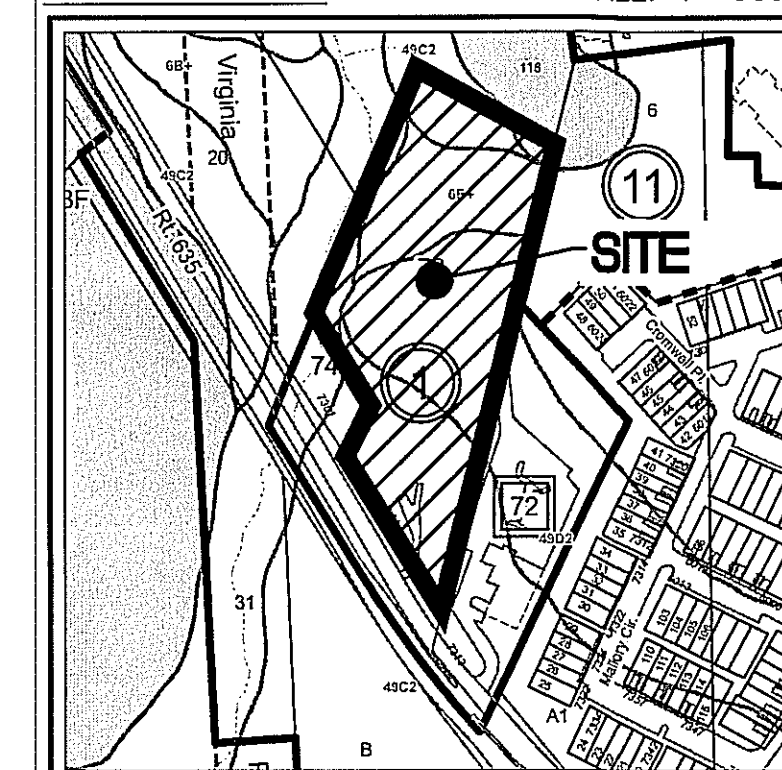
NOTE: PER ZONING ORDINANCE SECTION 11-203, NO LOADING
IS REQUIRED FOR SINGLE FAMILY DETACHED RESIDENTIAL.

1. A WAIVER OF SECTION 6-0303.8 OF THE PUBLIC FACILITIES MANUAL IS REQUESTED TO ALLOW UNDERGROUND DETENTION IN A RESIDENTIAL DEVELOPMENT.

SCALE: 1"=2000'



SCALE: 1"=300'



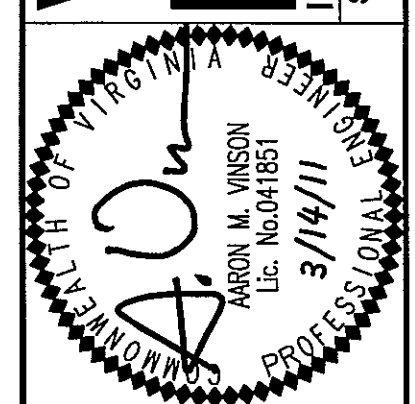
SOIL ID NUMBERS	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	GEOTECH REPORT REQ'D	PROBLEM CLASS
1A+	MIXED ALLUVIAL	POOR	POOR	GOOD	LOW	YES	A
6B+	HYATTSVILLE	FAIR	MARGINAL	GOOD	LOW	YES	B
49C2	LUNT (fst)	MARGINAL	FAIR	MODERATE	MODERATE	YES	A
49D2	LUNT (fst)	MARGINAL	FAIR	MODERATE	MODERATE	YES	A

SOIL INFORMATION WAS TAKEN FROM FAIRFAX COUNTY SOILS MAP

1. COVER SHEET
2. EXISTING CONDITIONS PLAN AND EXISTING VEGETATION MAP
3. CONCEPTUAL/FINAL DEVELOPMENT PLAN
- 3A. CONCEPTUAL/FINAL DEVELOPMENT PLAN SUPPLEMENTAL INFORMATION
4. CONCEPTUAL LANDSCAPE AND TREE PRESERVATION PLAN
- 4A. CONCEPTUAL LANDSCAPE ENLARGEMENTS
5. CONCEPTUAL LANDSCAPE NOTES AND TABULATIONS
6. TREE INVENTORY
7. TREE INVENTORY
8. TREE INVENTORY
9. PRELIMINARY STORMWATER MANAGEMENT/BEST MANAGEMENT PRACTICES/OUTFALL ANALYSIS
10. ZONING PLAN

WALTER L. PHILLIPS
 INCORPORATED
 ESTABLISHED 1945
 ENGINEERS • SURVEYORS • PLANNERS
 LANDSCAPE ARCHITECTS • ARBORISTS
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
 (703) 532-6163 Fax (703) 533-1301
 www.WLPINC.com

SCALE: AS NOTED	DATE: 9/27/16; REV. 12/03/10; 3/14/11	DRAWN: BF
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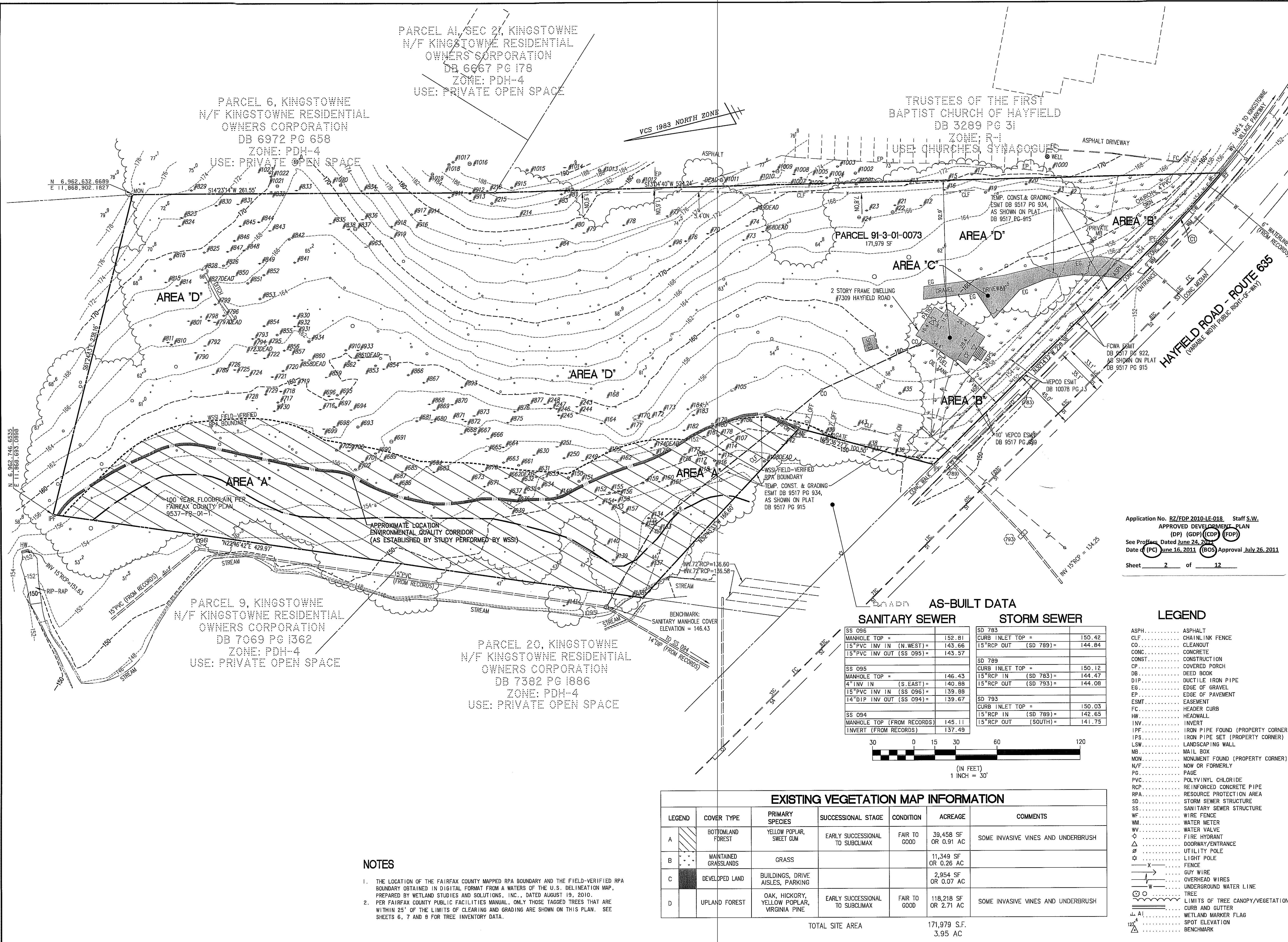
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COVER SHEET

7309 HAYFIELD ROAD

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

Application No. RZ/FDP 2010-1E-018 Staff S.W.
 APPROVED DEVELOPMENT PLAN
 (DP) (GDP) (CDP) (FDP)
 See Proffers Dated June 24, 2011
 Date of (PC) June 16, 2011 (BOS) Approval July 26, 2011
 Sheet 1 of 12



Engineers • Surveyors • Planners
Landscape Architects • Arborists
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WALTER L. PHILLIPS
INCORPORATED
ESTABLISHED 1945
DATE: 9/27/10 REV: 12/03/10, 3/14/11
SCALE: 1"=30'

NO. DESCRIPTION DATE REV. BY APPROVED

REVISION APPROVED BY

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Sheet 2 of 12

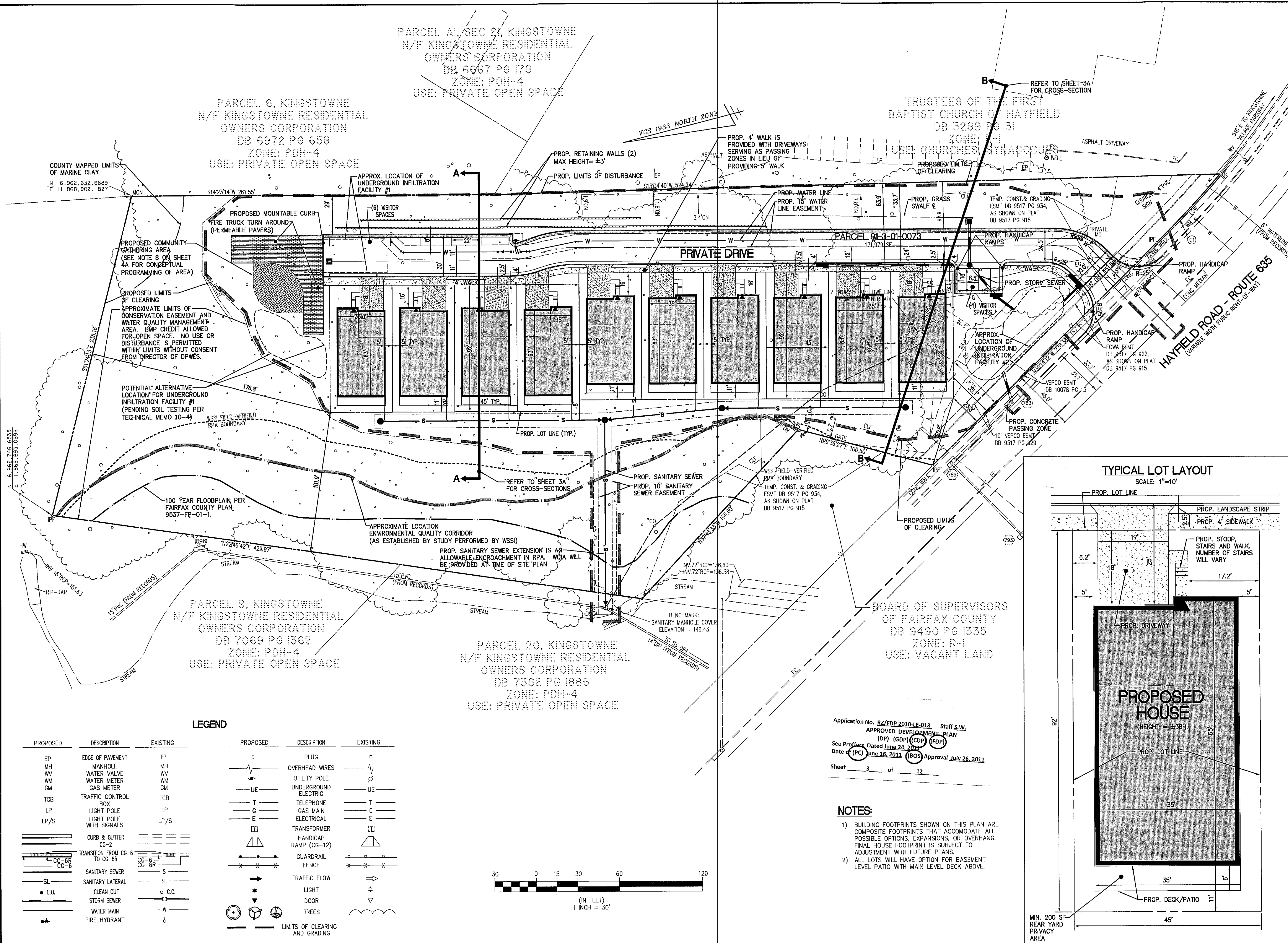
EXISTING CONDITIONS PLAN AND EXISTING VEGETATION MAP

7309 HAYFIELD ROAD

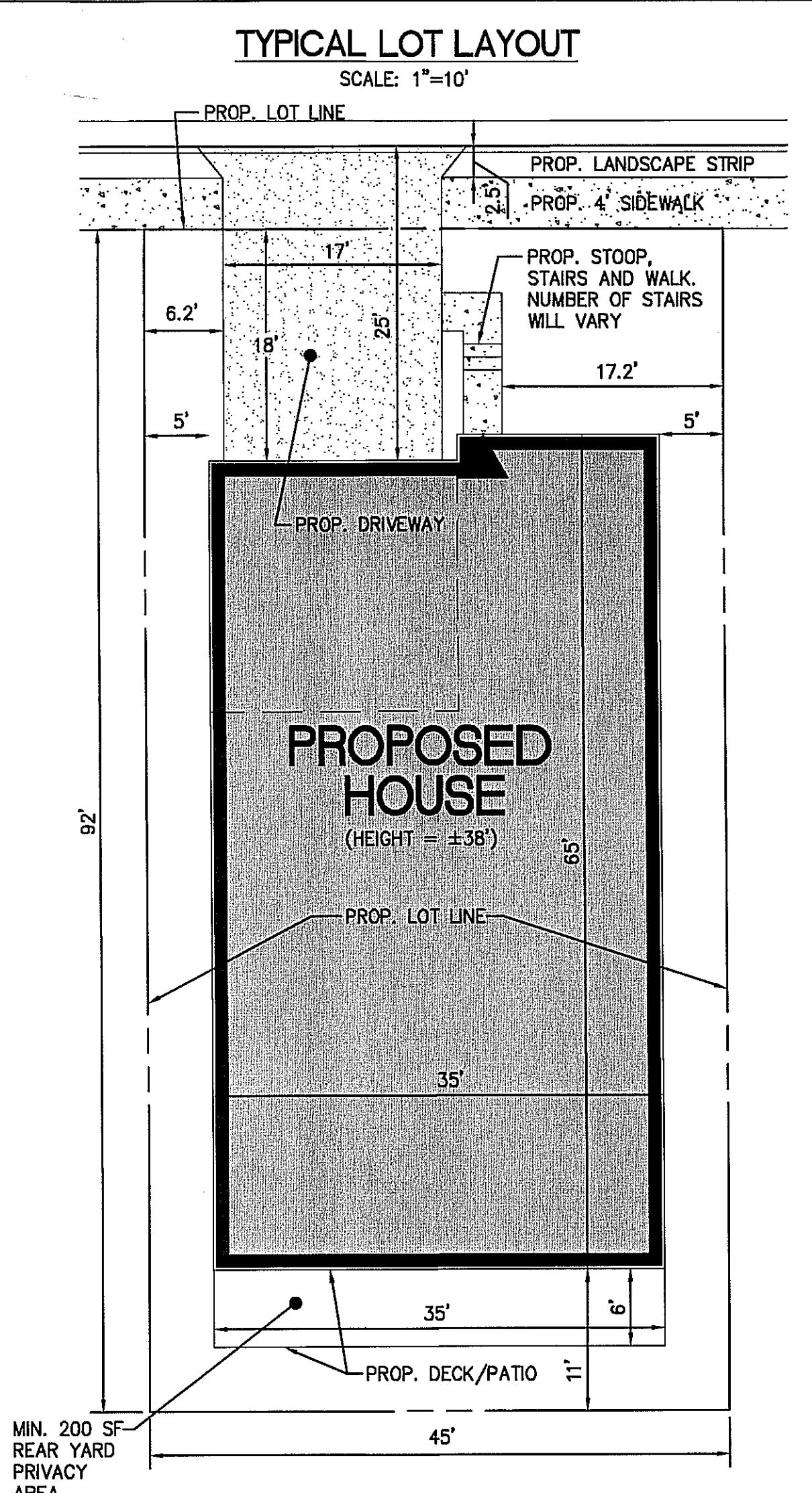
LEE DISTRICT

FAIRFAX COUNTY, VIRGINIA

SHEET: 2 of 10



LEGEND		
PROPOSED	DESCRIPTION	EXISTING
EP	EDGE OF PAVEMENT	EP
MH	MANHOLE	MH
WV	WATER VALVE	WV
WM	WATER METER	WM
GM	GAS METER	GM
TCB	TRAFFIC CONTROL BOX	TCB
LP	LIGHT POLE	LP
LP/S	LIGHT POLE WITH SIGNALS	LP/S
CG-2	CURB & GUTTER	CG-2
CG-6	TRANSITION FROM CG-6 TO CG-6R	CG-6
CG-6R	TRANSITION FROM CG-6 TO CG-6R	CG-6R
S	SANITARY SEWER	S
SL	SANITARY LATERAL	SL
C.O.	CLEAN OUT	C.O.
SS	STORM SEWER	SS
W	WATER MAIN	W
FH	FIRE HYDRANT	FH
PLUG	PLUG	PLUG
OW	OVERHEAD WIRES	OW
UE	UTILITY POLE	UE
UE	UNDERGROUND ELECTRIC	UE
T	TELEPHONE	T
G	GAS MAIN	G
E	ELECTRICAL	E
TR	TRANSFORMER	TR
HR	HANDICAP RAMP (CG-12)	HR
GF	GUARDRAIL FENCE	GF
TF	TRAFFIC FLOW	TF
L	LIGHT	L
D	DOOR	D
T	TREES	T
LC	LIMITS OF CLEARING AND GRADING	LC



Application No. RZ/FDP 2010-15-018 Staff S.W.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
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Sheet 3 of 12

- NOTES:**
- BUILDING FOOTPRINTS SHOWN ON THIS PLAN ARE COMPOSITE FOOTPRINTS THAT ACCOMMODATE ALL POSSIBLE OPTIONS, EXPANSIONS, OR OVERHANG. FINAL HOUSE FOOTPRINT IS SUBJECT TO ADJUSTMENT WITH FUTURE PLANS.
 - ALL LOTS WILL HAVE OPTION FOR BASEMENT LEVEL PATIO WITH MAIN LEVEL DECK ABOVE.

CONCEPTUAL/FINAL DEVELOPMENT PLAN

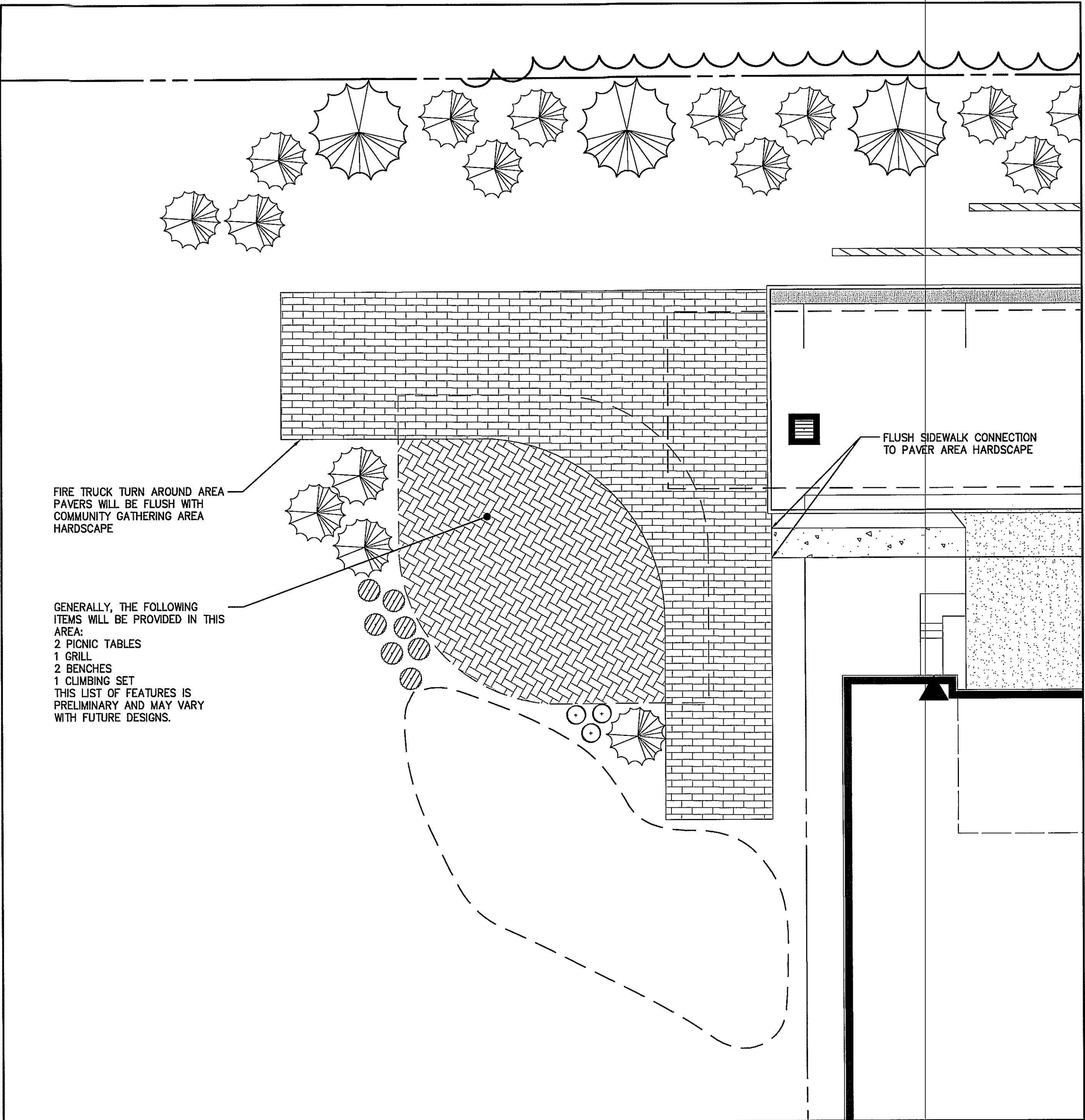
7309 HAYFIELD ROAD
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS
INCORPORATED
ESTABLISHED 1945
DATE: 9/27/10; REV: 12/03/10; 3/14/11
SCALE: AS NOTED

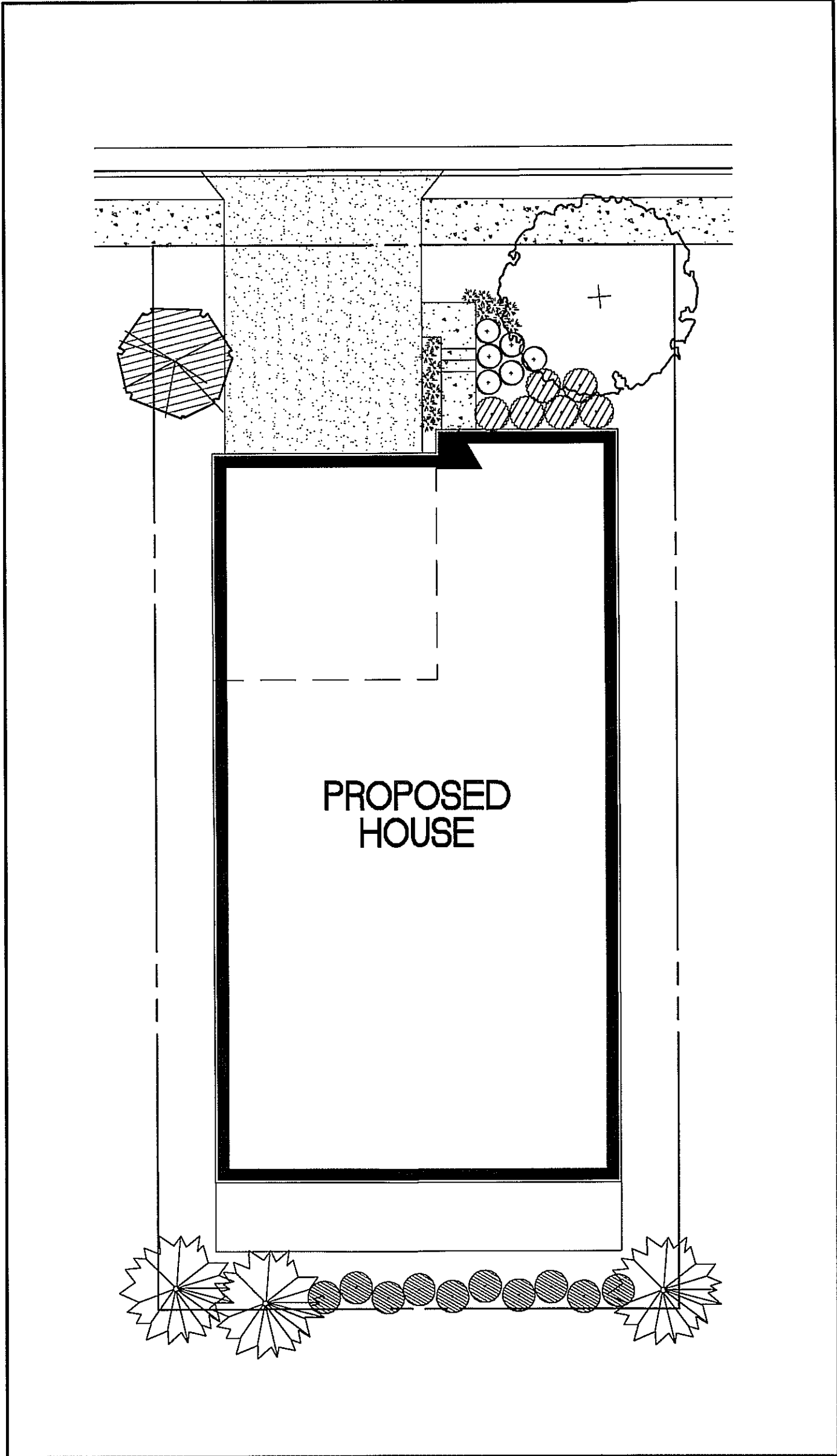
REVISION APPROVED BY
NO. DESCRIPTION DATE BY APPROVED DATE

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File No. FF-9 Tax Map No. 91-3 Job No. 10-055 Cadd Dwg. File: dwg\planning\10055P-0301.dwg Xref: dwg\planning\10055P-0000.dwg SHEET: 3 of 10

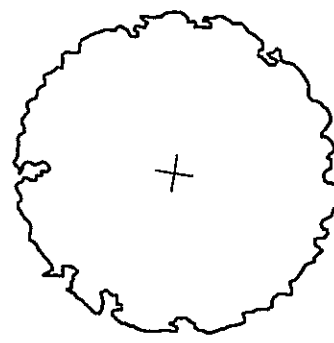


COMMUNITY GATHERING AREA CONCEPTUAL DETAIL
SCALE: 1"=10'

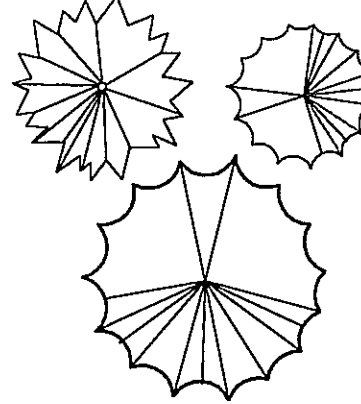


SCHEMATIC LOT LANDSCAPE CONCEPT
SCALE: 1"=10'

LEGEND



PROPOSED CATEGORY IV DECIDUOUS TREES (8 PROPOSED)
(EXAMPLES: QUERCUS PHELLOS, ACER RUBRUM, TILIA AMERICANA)



PROPOSED CATEGORY I-II EVERGREEN TREES (81 PROPOSED)
6' HT (CANOPY COVERAGE = AVG. 50 SF PER TREE)
SPECIES TO BE DETERMINED AT TIME OF SITE PLAN



PROPOSED SHRUBS

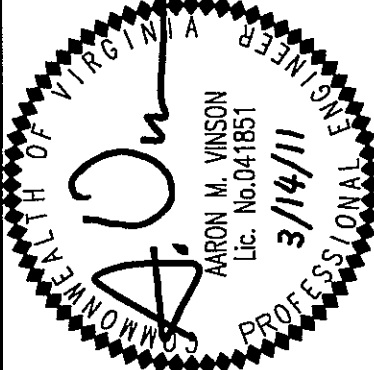
NOTES:

- 1) CONCEPTUAL LANDSCAPE PLANS ON THIS SHEET ARE SCHEMATIC IN NATURE AND ARE SUBJECT TO CHANGE WITH FUTURE PLANS.
- 2) CONCEPTUAL PLANS FOR COMMUNITY GATHERING AREA ARE SCHEMATIC IN NATURE AND SUBJECT TO ADJUSTMENT WITH FUTURE PLANS.

Application No. 87/FDP 2010-LE-018 Staff S.W.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
See Proffers Dated June 24, 2011
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CONCEPTUAL LANDSCAPE ENLARGEMENTS

7309 HAYFIELD ROAD
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FAIRFAX COUNTY, VIRGINIA



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DRAWN: BF

URBAN FOREST MANAGEMENT
POLICY ON LANDSCAPE IMPLEMENTATION
November 17, 2010

This compilation of selected portions of the Public Facilities Manual is intended to summarize and clarify regulations pertaining to the implementation of landscape plans on development sites subject to review and inspection by the County. Included are regulations governing the most common areas of noncompliance experienced by staff in the course of conducting landscape inspections, and a brief summary of the policy regarding seasonal landscape deferrals.

Tree Species and Size

1. Trees and shrubs that are planted shall be of the species and size specified on the approved plans. There shall be no deviations from the approved sizes specified except as approved by Fairfax County Urban Forest Management (UFMD). (PFM 12-0705.1A)

2. All trees and shrubs shall meet the standards for sizes and quality specified in the American Association of Nurserymen's American Standard for Nursery Stock, (ANSI Z60.1-1996). See attachment #1. (PFM 12-0705.1B)

Species Substitutions

3. Species substitutions within the tree categories listed in Table 12.17 are generally accepted unless otherwise specified by proffered conditions, development conditions, special exceptions, or special permits. Any tree substitution shall also be in conformance with the following. (PFM 12-0705.1C)

a. **Plant Diversity** - The use of substitutions shall not result in any species making up more than 10 percent, and shall not result in any one genus making up more than 33 percent, of the total number of trees required to be planted on the site. (PFM 12-0515.1L)

b. **Authorization** - A letter signed by the permittee shall be provided to UFMD acknowledging any proposed substitutions to trees and shrubs shown on the approved plans. (PFM 12-0705.1C(2))

c. **Substitutions Outside of Tree Category** - Substitution of a tree shown on the approved plan from one tree category, as listed in PFM Table 12.17, with a tree from a different category shall require a revision to the approved plan. (PFM 12-0705.1C(3))

d. **Species Suitability** - Substituted species must be suited to the post-development conditions of the planting location for which it is intended. (PFM 12-0601.1E)

e. **Additional Tree Cover Credit** - In cases where additional tree cover credit has been given, no tree substitutions shall be made except as approved by the Urban Forest Management. Examples of additional credit include the following:

Air Quality, PFM 12-0510.4B(1)	Water Quality, PFM 12-0510.4B(3)
Energy Conservation, PFM 12-0510.4B(2)	Native Trees, PFM 12-0510.4B(5)
Wildlife Benefits, PFM 12-0510.4B(4)	

Planting Locations

4. Planting locations of all trees on the site shall be in substantial conformance with the approved plan. UFMD acknowledges that not all trees may be optimally located, as shown on the plan, and encourage input from Permittees and their landscape professionals regarding proposed improvements that might be implemented. Any substantive deviations from the approved plan that are made in the field must be approved by UFMD and shall be in conformance with the following:

a. **Planting Area** - At least the minimum size planting area shall be provided for each tree according to its projected 10-year tree cover area as found in Table 12.7. (PFM 12-0601.1B)

b. **Environmental Conditions** - Light, moisture, and other conditions affecting the health and viability of the tree at the field location shall be suitable for the species. (PFM 12-0601.1E)

c. **Compacted Soil** - If planting in areas that have been previously compacted, the soil shall be properly prepared (tilled and amended as needed based on soil samples) to a depth of 12 inches, prior to installation of landscape material. Soil within individual planting holes shall not be amended. (PFM 12-0705.3B)

d. **Restrictive Barriers** - Trees shall be planted no closer than four feet from any restrictive barrier. (PFM 12-0510.4E(5))

d. **Spacing** - Trees shall be spaced so that the outer limit of their projected 10-year tree cover area, as indicated in Table 12.19, does not significantly overlap; or as determined appropriate by UFMD for site conditions and to promote long-term survival. (PFM 12-0510.4E(6))

e. **Easements** - Trees for tree cover credit shall not be planted within any existing or proposed public utility easement or within five feet of storm drainage easements that contain pipes. In addition, trees shall not be planted in an area that will interfere with existing or proposed utilities or with maintenance of the utility, as determined by the Director of DPWES. (PFM 12-0515.6B)

Staking and Guying

5. Staking and guying should only be implemented where site conditions warrant their use. Planted trees should be assessed individually and staking and guying installed only as required. Conditions where staking and guying may be necessary to ensure stability include: windy locations, steep slopes, or where vandalism may be a concern. All staking and guying material must be removed within one year of plant installation (PFM 12-0705.3C)

Seasonal Landscape Deferrals

6. A Seasonal Landscape Deferral may be granted when seasonal or weather-related conditions, such as excessively wet soil, extended periods of drought, or frozen ground, substantially reduce the survivability of the plant material, as determined by the Urban Forest Management. A request for a landscape deferral will not be granted for landscaping required prior to the issuance of a RUP or Non-RUP when seasonal or weather-related conditions on the site plan do not preclude planting. Lack of species availability may justify the approval of a Seasonal Landscape Deferral when specific plant species are required by proffers or conditions.

7. The party responsible for the placement of the performance bond and conservation deposit for the project shall act as the Applicant for this seasonal deferral. Seasonal Landscape Deferral request forms can be obtained from the Environmental and Facilities Inspections Division or the Urban Forest Management.

8. At the time of final inspection for release of performance bond and conservation deposit, all of the plant material is inspected. Plant material previously inspected, as part of the process to release any deferral deposit that may have existed, is not exempt from this final inspection. All plant material must be healthy and in good condition.

Requirements Prior to Approval of RUP/Non-RUP

9. The landscaping and screening requirements of Article 13 or of any approved proffered condition, special permit, special exception or variance must be completed prior to approval of any Residential or Non-Residential Use Permit; provided, however, that completion of the requirements may be delayed when justification satisfactory to the Director is provided; such justification shall include an agreement and bond with surety satisfactory to the Director for completion in accordance with a firm schedule for timely completion. (ZO 18-704.3) See Seasonal Landscape Deferrals above.

INVASIVE PLANT NARRATIVE:

INVASIVE PLANT MATERIAL WILL BE REMOVED UNDER SUPERVISION OF THE PROJECT ARBORIST. ALL INVASIVE PLANTS ARE TO BE REMOVED BY HAND TO MINIMIZE SITE DISTURBANCE WITHIN LIMITS OF TREE SAVE AREAS THAT ARE COUNTED TOWARD TREE COVER CREDIT.

INVASIVE PLANTS IDENTIFIED TO BE REMOVED:

1. WISTERIA

REMOVE BY HAND TO MINIMIZE SITE DISTURBANCE. IN THE GROWING SEASON, AN APPLICATION OF AN ENVIRONMENTALLY SENSITIVE APPROVED HERBICIDE MAY BE APPLIED BY A VIRGINIA CERTIFIED APPLICATOR. THIS TREATMENT MUST BE REPEATED 3-6 TIMES A YEAR FOR 2-4 YEARS UNTIL THE ENERGY RESOURCES OF THE PLANT HAVE BEEN DEPLETED. FOR THIS PROJECT, APPLICATION AND MONITORING WILL BE FOR TWO COMPLETE GROWING SEASONS.

2. POISON IVY - WITHIN 50' OF LIMITS OF CLEARING AND GRADING

REMOVE BY HAND TO MINIMIZE SITE DISTURBANCE. USE A SYSTEMIC HERBICIDE DURING THE GROWING SEASON (LIKE GLYPHOSATE) FOR UPLAND AREAS AND FOR WETLAND APPLICATIONS TO BE APPLIED BY A VIRGINIA CERTIFIED APPLICATOR. THIS TREATMENT MUST BE REPEATED 3-6 TIMES A YEAR FOR 2-4 YEARS UNTIL THE ENERGY RESOURCES OF THE PLANT HAVE BEEN DEPLETED. FOR THIS PROJECT, APPLICATION AND MONITORING WILL BE FOR TWO COMPLETE GROWING SEASONS.

TREE PRESERVATION NARRATIVE:

THIS INFORMATION IS RELATIVE TO THE DEVELOPMENT KNOWN AS THE RICH PROPERTY AT 7309 HAYFIELD ROAD, FAIRFAX COUNTY, VA. IT DESCRIBES THE CURRENT CONDITION AND SUITABILITY FOR PRESERVATION FOR THE GROUPS OF TREES LOCATED ON THE SUBJECT PROPERTY, AS WELL AS PROPOSED GENERAL MEANS FOR PRESERVATION. THE EXISTING TREE COVER IS A TYPICAL MIX OF HARDWOODS DOMINATED BY MATURE OAKS, BEECH, MAPLES AND TULIP POPLARS. THE EXISTING TREES ARE IN GENERALLY GOOD TO FAIR CONDITION WITH SOME INVASIVE PLANT MATERIAL, ESPECIALLY IN THE FLOODPLAIN AREAS. (SEE INVASIVE NARRATIVE) ALL ONSITE TREES WITHIN THE LIMITS OF CLEARING AND GRADING TO BE REMOVED.

THE CONSTRUCTION LIMITS SHOWN INDICATE A RANGE OF CUT WITHIN THE CRZ OF SEVERAL LARGE TREES TO BE PRESERVED DUE TO THE INSTALLATION OF A WALL TO PROVIDE ADDITIONAL PARKING. ANY TREE THE CRZ OF WHICH IS AFFECTED BY THE CONSTRUCTION PROCESS SHOULD BE FERTILIZED AND WATERED THOROUGHLY AS THE LIMITS OF DISTURBANCE ARE STABILIZED AND ALL CONSTRUCTION MATERIALS AND EQUIPMENT ARE REMOVED. A 3-4" LAYER OF MUCH SHOULD BE APPLIED USING NON-MOTORIZED EQUIPMENT (BY HAND USING WHEELBARROWS) TO TREES WITHIN 10 FEET OF THE LIMITS OF DISTURBANCE. NO MOTORIZED EQUIPMENT WILL BE USED TO DISTRIBUTE MULCH WITHIN TREE PRESERVATION AREAS. MANUAL METHODS WILL INCLUDE USING WHEELBARROWS AND MANUAL LABOR TO DISTRIBUTE MULCH WITHIN THESE AREAS.

NO TREES OUTSIDE THE LIMITS OF CLEARING AND GRADING ARE TO BE REMOVED UNLESS INDICATED ON PLAN. TREES WITH MORE THAN 25% OF THEIR CRZ IMPACTED BY CONSTRUCTION SHALL BE WATERED REGULARLY DURING CONSTRUCTION ACTIVITY.

DURING ANY CLEARING OR TREE/VEGETATION REMOVAL IN THE AREAS 10' ADJACENT TO OR IN THE TREE PRESERVATION AREAS, THE PROJECT ARBORIST SHALL BE PRESENT TO MONITOR THE PROCESS AND ENSURE THAT THE ACTIVITIES ARE CONDUCTED AS PROFFERED AND AS APPROVED BY URBAN FOREST MANAGEMENT.

THE INSTALLATION OF TREE PROTECTION FENCING, INCLUDING SUPER SILT FENCE IF IT IS TO BE USED AS TREE PROTECTION FENCE, SHALL BE INSTALLED UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST, WHO SHALL BE A CERTIFIED ARBORIST, AND ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION THAT IS TO BE PRESERVED. AFTER ALL CONSTRUCTION ACTIVITY IS COMPLETE, THE TREE PROTECTION FENCE/SUPER SILT FENCE SHALL BE CAREFULLY REMOVED AND THE MULCH LAID DOWN FOR THE TREE PROTECTION FENCE SPREAD OUT TO A THICKNESS OF APPROX. 2", TAKING CARE TO MINIMIZE DAMAGE TO THE EXISTING NATIVE ORGANIC LAYER.

TREES IN PRESERVATION AREAS INDICATED ON PLAN TO BE REMOVED SHALL BE REMOVED USING HAND OPERATED EQUIPMENT (SAW CUT) UNDER THE DIRECTION OF THE PROJECT ARBORIST. TREE AND SHRUB UNDERSTORY RETENTION MUST BE MAXIMIZED. THESE METHODS SHALL INCLUDE THE FOLLOWING:

1. ALL HAND-OPERATED POWER TOOLS USED WITHIN TREE SAVE AREAS MUST BE IN GOOD OPERATING CONDITION, (POWER WASHED), FREE OF LEAKS OR EXCESS OIL AND GREASE.
2. NO EQUIPMENT REFUELING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 100 FEET OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
3. NO DEBRIS FROM TREE REMOVAL OUTSIDE PROTECTED AREAS SHALL ENCRUCH WITHIN THE TREE PRESERVATION AREAS.
4. A SPILL CONTAINMENT KIT MUST BE KEPT READILY ACCESSIBLE ONSITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT.
5. TREES MUST BE FELLED IN SECTIONS/AND/OR CRANE ASSTED REMOVALS ARE TO BE CONSIDERED FIRST. NO DEBRIS IS TO BE FELLED FROM TREES OUTSIDE THE LOC INTO TREE PRESERVATION AREAS.
6. ALL NON-TARGET TREES AND VEGETATION TO BE RETAINED.
7. IN THE EVENT THAT THERE IS A NECESSARY TRESPASS INTO ANY TREE PRESERVATION AREA, PROTECTION FOR THE NATIVE ORGANIC LAYER SHALL BE PROVIDED. FOR FOOT TRAFFIC, A 3-4" LAYER OF MULCH SHALL BE INSTALLED PRIOR TO THE TRESPASS.

TREES WITHIN 10' OF THE LOC WILL BE REMOVED USING HAND-OPERATED EQUIPMENT (SAW CUT) TO LIMIT DISTURBANCE TO THE ADJACENT SITE AREA. THEY SHALL NOT BE RIPPED OUT WHOLE WITH EQUIPMENT. STUMPS MAY BE GROUND OUTSIDE THE LOC. NO STUMP WITHIN THE TREE PRESERVATION AREAS MAY BE GROUND OUT.

A WEEKLY MONITORING REPORT WILL BE SENT TO UFMD BY THE PROJECT ARBORIST DURING THE INSTALLATION OF THE TREE PROTECTION FENCING AND INSTALLATION OF EAS CONTROL MEASURES. THE PROJECT ARBORIST WILL BE ON SITE DURING THE INSTALLATION OF THE TREE PROTECTION FENCING. DURING CONSTRUCTION, A MONTHLY STATUS REPORT WILL BE SENT TO THE UFMD BY THE PROJECT ARBORIST.

NOTE:

ALL PRUNING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A300 PRUNING STANDARDS. PRUNING SHALL BE DONE BY PERSONNEL WHO, THROUGH TRAINING AND ON-THE-JOB EXPERIENCE, UNDERSTAND THE TECHNIQUES AND HAZARDS OF TREE CARE WORK AND UNDERSTAND THE SAFETY REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE ANSI Z133.1 STANDARDS. REFER TO THE ANSI STANDARDS LISTED ABOVE, AND PLATE 9-12(9M-12) IN THE FAIRFAX COUNTY PFM FOR A GRAPHICAL DEPICTION OF PROPER PRUNING TECHNIQUE. 12-0706.4A(1)

NO TREE SHALL BE TOPPED UNDER ANY CIRCUMSTANCE. NO PRUNING CUTS SHALL BE PAINED, COATED OR OTHERWISE TREATED UNLESS SPECIFICALLY REQUIRED BY THE ATTENDING ARBORIST AND JURISDICTIONAL ARBORIST IN THE FIELD.

TABLE 12.3

TABLE 12.3 TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT

A. PRE-DEVELOPMENT AREA OF EXISTING TREE CANOPY (FROM EWM):	157,676 SF
B. PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY: $91.7\% \text{ } (157,676 / 171,979)$	
C. PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE:	25% (42,995 SF)
D. PERCENTAGE OF 10 YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION: $(42,995 \times 91.7\%)$	= 39,426 SF
E. PROPOSED PERCENTAGE OF CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION: $\pm 62,462 \text{ SF} > 39,426 \text{ SF} = 100\% \text{ OF REQUIREMENT}$ (NOT INCLUDING EXISTING PARKING LOT LANDSCAPE AND PLANTED TREES FROM SITE PLAN)	
F. HAS THE TREE PRESERVATION TARGET MINIMUM BEEN MET? YES	

TABLE 12.10 - 10-YEAR CANOPY CALCULATION WORKSHEET

Step		Totals	Reference
A. Tree Preservation Target and Statement			
A 1	Place the Tree Preservation Target calculations and statement here preceding the 10-year tree canopy calculations	SEE TABLE 12.3	see § 12-0508.2 for list of required elements and worksheet
B. Tree Canopy Requirement			
B1	Identify gross site area =	171,979	§ 12-0511.1A
B2	Subtract area dedicated to parks, road frontage, and	-0-	§ 12-0511.1B
B3	Subtract area of exemptions =	-0-	§ 12-0511.1C(1) through § 12-0511.1C(6)
B4	Adjusted gross site area (B1 - B2) =	171,979	
B5	Identify site's zoning and/or use		
B6	Percentage of 10-year tree canopy required =	25%	§ 12-510.1 and Table 12.4
B7	Area of 10-year tree canopy required (B4 x B) =	42,995	
B8	Modification of 10-year Tree Canopy Requirements requested?	NO	Yes or No
B9	If B8 is yes, then list plan sheet where modification request is located		Sheet number

C. Tree Preservation

C1	Tree Preservation Target Area =	±39,426	SEE TABLE 12.3, THIS SHEET
C2	Total canopy area meeting standards of § 12-0400 =	±21,447	
C3	C2 x 1.25 =	±26,809	§ 12-0510.3B
C4	Total canopy area provided by unique or valuable forest or woodland communities =	-0-	
C5	C4 x 1.5 =	-0-	§ 12-0510.3B(1)
C6	Total of canopy area provided by "Heritage," "Memorial," "Specimen," or "Street" trees =	-0-	
C7	C6 x 1.5 to 3.0 =	-0-	§ 12-0510.3B(2)
C8	Canopy area of trees within Resource Protection Areas (CONSERVATION EASEMENT) and 100-year floodplains =	±35,653	
C9	C8 x 1.0 =	±35,653	§ 12-0510.3C(1)
C10	Total of C3, C5, C7 and C9 =	±62,462	If area of C10 is less than B7 THEN REMAINDER requirement must be met through tree planting - go to D

D. Tree Planting

D1	Area of canopy to be met through tree planting (B7-C10) =	5,650*	
D2	Area of canopy Planted for air quality benefits =		
D3	x 1.5 =		§ 12-0510.4B(1)
D4	Area of canopy planted for energy conservation =		
D5	x 1.5 =		§ 12-0510.4B(2)
D6	Area of canopy planted for water quality benefits =		
D7	x 1.25 =		§ 12-0510.4B(3)
D8	Area of canopy planted for wildlife benefits =		
D9	x 1.5 =		§ 12-0510.4B(4)
D10	Area of canopy provide by native trees =		
D11	x 1.5 =		§ 12-0510.4B(5)
D12	Area of canopy provided by improved cultivars and varieties =		
D13	x 1.25 =		§ 12-0510.4B(6)
D14	Area of canopy provided through tree seedlings =		§ 12-0510.4D(1)
D15	Area of canopy provided through native shrubs or woody seed mix =		
	x1.0 =		
D16	Percentage of D14 represented by D15=		
D17	Total of canopy area provided through tree planting =	±5,650 *	
D18	Is an offsite planting relief requested?	NO	Yes or No
D19	Tree Bank or Tree Fund?	NONE	
D20	Canopy area requested to be provided through offsite banking or tree fund	NONE	
D21	Amount to be deposited into the Tree Preservation and Planting Fund	NONE	

E. Total of 10-year Tree Canopy Provided

E1	Total of canopy area provided through tree preservation (C10) =	±62,462	
E2	Total of canopy area provided through tree planting (D17) =	±5,650	
E3	Total of canopy area provided through offsite mechanism (D19) =	0	
E4	Total of 10-year Tree Canopy Provided = (E1+E2+E3)	±68,112	Total of E1 through E3. Area should meet or exceed area REQUIRED BY B7

* 81 EVERGREEN TREES
@ ±50 SF PER EVERGREEN
8 DECIDUOUS TREES
@ ±200 SF PER DECIDUOUS

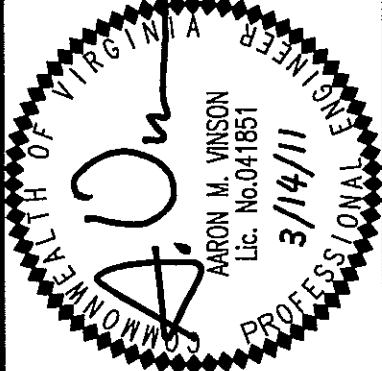
Application No. RZ/FDP 2010-LE-018 Staff S.W.
APPROVED DEVELOPMENT PLAN
(DP) (GDPI) (CDP) (FDP)
See Proffers Dated June 24, 2011
Date of (PC) June 16, 2011 (BOS) Approval July 26, 2011
Sheet 7 of 12

NOTE:
ALL NOTES AND DETAILS PROVIDED ON THIS SHEET
ARE CURRENT AT TIME OF PLAN PREPARATION.
CONTRACTOR IS RESPONSIBLE FOR USING CURRENT
DETAILS AT TIME OF CONSTRUCTION.

CONCEPTUAL LANDSCAPE NOTES AND TABULATIONS

7309 HAYFIELD ROAD

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA



NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

WALTER L. PHILLIPS
INCORPORATED
SCALE: NA
DATE: 9/27/10; REV: 12/09/10; 3/14/11

Engineers • Surveyors • Planners
Landscape Architects • Arborists
207 PARK AVENUE
FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 Fax (703) 533-1301
www.WLPINC.com

Tree Inventory																
Tree #	Botanical Name	Common Name	Size	Critical Root Zone (CRZ)	Species Rating	Condition %	Removal	Activities								
								Tree Protection Fence	Mulch	Fertilize	Crown Clean - remove dead and diseased limbs over 1" cal	Root Prune	Remove Vines	Treat Pests	Hand Removal	Notes
Tree Survey Information Completed by Walter Phillips, Inc - Arborist John L. Gavarkavich - ISA # MA-4728A																
2	Acer rubrum	Red maple	8"	8'	80%	75%	X								X	
3	Acer rubrum	Red maple	25"	25'	80%	65%	X								X	
12	Prunus serotina	Black cherry	15"	15'	70%	40%	X									
13	Nyssa sylvatica	Blackgum	11"	11'	70%	60%	X									
15	Diospyros virginiana	Common persimmon	12"	12'	70%	45%										Co-Owned
16	Acer rubrum	Red maple	8"	8'	80%	45%	X									
17	Prunus serotina	Black cherry	27"	27'	70%	60%		X				X				Offsite
19	Acer rubrum	Red maple	22"	22'	80%	65%	X									
20	Acer rubrum	Red maple	20"	20'	80%	60%		X	X		X	X	X			
21	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	70%	X									
22	Liriodendron tulipifera	Yellow-poplar	26"	26'	75%	80%	X									
23	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	65%	X									
24	Liriodendron tulipifera	Yellow-poplar	23"	23'	75%	70%	X									
35	Acer rubrum	Red maple	21"	21'	80%	75%	X									
36	Juniperus virginiana	Eastern redcedar	12"	12'	85%	60%		X	X							
37	Alanthus albasima	Tree-of-heaven	8"	8'	55%	70%		X	X				X			
38	Juniperus virginiana	Eastern redcedar	13"	13'	85%	25%	X								X	
39	Catalpa speciosa	Northern catalpa	16"	16'	55%	55%		X	X		X	X	X			
40	Acer rubrum	Red maple	17"	17'	80%	40%		X	X		X	X	X			
41	Acer rubrum	Red maple	12"	12'	80%	65%		X	X				X			
42	Prunus serotina	Black cherry	7"	8'	70%	50%		X	X				X			
43	Albizia julibrissin	Mimosa	7"	8'	45%	70%	X								X	
68	Dead		9"	9'	0%	0%	X									
69	Dead		9"	9'	0%	0%	X									
70	Pinus virginiana	Virginia Pine	10"	10'	80%	60%	X									
73	Pinus virginiana	Virginia Pine	9"	9'	80%	50%	X									
74	Pinus virginiana	Virginia Pine	8"	8'	80%	45%	X									
76	Pinus virginiana	Virginia Pine	14"	14'	80%	60%	X									
77	Catalpa speciosa	Northern catalpa	13"	13'	80%	60%	X									
78	Catalpa speciosa	Northern catalpa	13"	13'	80%	55%	X									
79	Quercus rubra	Northern red oak	10"	10'	80%	60%	X									
80	Quercus macrocarpa	Bur Oak	10"	10'	80%	30%	X									
81	Quercus prinus	Chestnut Oak	6"	8'	80%	55%	X								X	
82	Pinus virginiana	Virginia Pine	14"	14'	80%	65%	X								X	
83	Quercus rubra	Northern red oak	9"	9'	85%	60%	X								X	
84		na					X									
96	Pinus virginiana	Virginia Pine	12"	12'	80%	65%	X									
105	Albizia julibrissin	Mimosa	10"	10'	45%	60%	X									
106	Acer rubrum	Red maple	15"	15'	80%	50%	X								X	
107	Acer rubrum	Red maple	9"	9'	80%	50%		X	X			X	X			
108	dead		20"	0'	0%	0%	X								X	Retain as tree snag - remove top and leave large stump.
114	Acer rubrum	Red maple	14"	14'	80%	50%		X	X							
115	Acer rubrum	Red maple	13"	13'	80%	50%		X	X		X		X			
116	Liriodendron tulipifera	Yellow-poplar	19"	19'	75%	50%		X	X							
117	Liriodendron tulipifera	Yellow-poplar	24"	24'	75%	60%		X	X		X		X			
118	Liriodendron tulipifera	Yellow-poplar	24"	24'	75%	60%		X	X		X					
133	Acer rubrum	Red maple	31"	47'	80%	45%		X	X			X				
134	Acer rubrum	Red maple	16"	16'	80%	40%	X								X	Leave stumps as tree snags
135	Acer rubrum	Red maple	16"	16'	80%	70%		X	X		X		X			
137	Magnolia virginiana	Sweetbay magnolia	7"	8'	75%	40%		X	X				X	X		
138	Acer rubrum	Red maple	9"	9'	80%	40%		X	X		X					Exposed roots at streambed
139	Liriodendron tulipifera	Yellow-poplar	20"	20'	75%	65%	X									
140	Acer rubrum	Red maple	20"	20'	80%	55%	X									
141	Liquidambar styraciflua	Sweetgum	10"	10'	75%	70%		X								Offsite - IN SAN SEW EASEMENT
149	Liquidambar styraciflua	Sweetgum	9"	9'	75%	50%		X	X							
150	Liriodendron tulipifera	Yellow-poplar	19"	20'	75%	65%		X	X		X	X				

Tree Inventory																
Tree #	Botanical Name	Common Name	Size	Critical Root Zone (CRZ)	Species Rating	Condition %	Removal	Activities								
								Tree Protection Fence	Mulch	Fertilize	Crown Clean - remove dead and diseased limbs over 1" cal	Root Prune	Remove Vines	Treat Pests	Hand Removal	Notes
Tree Survey Information Completed by Walter Phillips, Inc - Arborist John L. Gavarkavich - ISA # MA-4728A																
151	Liriodendron tulipifera	Yellow-poplar	22"	22'	75%	65%		X	X		X	X				
152	Liriodendron tulipifera	Yellow-poplar	15"	15'	75%	40%	X								X	
153	Liriodendron tulipifera	Yellow-poplar	19"	19'	75%	60%	X								X	
154	Liquidambar styraciflua	Sweetgum	6"	8'	75%	60%	X								X	
155/156	Liriodendron tulipifera	Yellow-poplar	42"	63'	75%	70%	X								X	
157	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	50%		X	X		X	X				
158	Acer rubrum	Red maple	13"	13'	80%	40%	X								X	
159	Liriodendron tulipifera	Yellow-poplar	39"	59'	75%	40%	X								X	
160	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	40%		X	X							
161	Acer rubrum	Red maple	11"	11'	80%	65%		X	X							
162	Fagus grandifolia	American beech	11"	11'	85%	80%		X	X		X	X				Over 40% of root zone impacted by construction, monitor and not counted for tree cover credit
163	Quercus rubra	Northern red oak	19"	19'	85%	70%	X								X	
164	Fagus grandifolia	American beech	9"	9'	85%	65%	X									
168							X									
170	Carya glabra	Pignut hickory	8"	8'	80%	60%	X									
171	Quercus rubra	Northern red oak	10"	10'	85%	65%	X									
172	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	55%	X									
173	Liriodendron tulipifera	Yellow-poplar	25"	25'	75%	50%	X									
174	Dead		11"	0'	0%	0%	X									
175	Fagus grandifolia	American beech	13"	13'	85%	65%		X	X			X				
176	Acer rubrum	Red maple	9"	9'	80%	60%		X	X			X				
177	Acer rubrum	Red maple	13"	13'	80%	50%		X	X			X	X			
178	Acer rubrum	Red maple	18"	18'	80%	75%		X	X			X				
179	Acer rubrum	Red maple	15"	15'	80%	60%		X	X			X				
180	Acer rubrum	Red maple	7"	8'	80%	45%		X	X			X	X			
181	Acer rubrum	Red maple	18"	18'	80%	45%		X	X			X				
182	Acer rubrum	Red maple	12"	12'	80%	60%		X	X			X				
183	Acer rubrum	Red maple	17"	17'	80%	60%	X									
184	Liriodendron tulipifera	Yellow-poplar	42"	63'	75%	60%	X									
214	Fagus grandifolia	American beech	7"	8'	85%	70%	X									
215	Quercus rubra	Northern red oak	22"	22'	85%	70%	X									
216	Pinus virginiana	Virginia Pine	16"	16'	80%	60%		X	X			X				
243	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	60%	X									
244	Fagus grandifolia	American beech	12"	12'	85%	70%	X									
245	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	70%	X									
246	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	60%	X									
247	Liriodendron tulipifera	Yellow-poplar	11"	11'	75%	70%	X									
248	Liriodendron tulipifera	Yellow-poplar	7"	8'	75%	60%	X									
249	Carya glabra	Pignut hickory	8"	8'	80%	65%		X	X			X				
250	Fagus grandifolia	American beech	13"	13'	85%	80%		X	X			X				
251	Fagus grandifolia	American beech	8"	8'	85%	75%	X									
630	Fagus grandifolia	American beech	9"	9'	85%	80%		X	X			X				
631	Fagus grandifolia	American beech	7"	8'	85%	70%		X	X							
632	Liriodendron tulipifera	Yellow-poplar	16"	16'	75%	65%		X	X							
633	Fagus grandifolia	American beech	7"	8'	85%	65%		X	X							
634	Liriodendron tulipifera	Yellow-poplar	19"	19'	75%	45%		X	X							
635	Acer rubrum	Red maple	10"	10'	80%	60%		X	X							
636	Liriodendron tulipifera	Yellow-poplar	11"	11'	75%	60%		X	X							
637	Acer rubrum	Red maple	10"	10'	80%	65%		X	X			X				
661	Quercus rubra	Red Oak	20"	20'	75%	70%		X	X			X				
662	Dead		8"	8'	0%	0%	X								X	Retain as tree snag - remove top and leave large stump.
663	Pinus virginiana	Virginia Pine	16"	16'	80%	55%		X	X			X				
664	Pinus virginiana	Virginia Pine	10"	10'	0%	0%	X								X	
665	Acer rubrum	Red maple	9"	9'	80%	60%		X	X			X				
666	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	60%		X								X
667	Liriodendron tulipifera	Yellow-poplar	14"	14'	75%	60%	X									X
668	Liquidambar styraciflua	Sweetgum	7"	8'	75%	65%	X									X</

Tree Inventory																
Tree #	Botanical Name	Common Name	Size	Critical Root Zone (CRZ)	Species Rating	Condition %	Removal	Activities								
								Tree Protection Fence	Mulch	Fertilize	Crown Clean - remove dead and diseased limbs over 1" cal	Root Prune	Remove Vines	Treat Pests	Hand Removal	
	Genus - Species		DBH	Radius (ft)												Notes
Tree Survey Information Completed by: Walter Phillips, Inc. - Arborist John L. Gavarkavich - ISA # MA-4728A																
669	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	70%		X	X			X				
670	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	60%		X	X							
671	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	50%		X	X							
673	Carya glabra	Pignut hickory	9"	9'	80%	40%		X	X							
674	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	55%		X	X			X				
675	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	60%		X	X			X				
676	Liriodendron tulipifera	Yellow-poplar	16"	16'	75%	60%		X	X			X				
677	Acer rubrum	Red maple	9"	9'	80%	65%		X	X			X				
678	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	55%	X									
679	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	50%		X	X			X				
680	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	45%	X									
681	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	45%	X									
682	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	50%		X	X			X				
683	Acer rubrum	Red maple	15"	15'	80%	60%		X	X							
684	Acer rubrum	Red maple	7"	8'	80%	60%		X	X							
685	Liriodendron tulipifera	Yellow-poplar	7"	8'	75%	50%		X	X							
686	Liriodendron tulipifera	Yellow-poplar	11"	11'	75%			X	X							
687	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	65%		X	X							
689	Acer rubrum	Red maple	9"	9'	80%	60%		X	X							
690	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	30%	X								X	Retain as tree snag - remove top and leave large stump. Dead at top, sucker growth only.
691	Liriodendron tulipifera	Yellow-poplar	28"	28'	75%	55%		X	X		X	X				
692	Acer rubrum	Red maple	7"	8'	80%	60%		X	X			X				
693	Pinus virginiana	Virginia pine	23"	23'	65%	50%	X								X	
694	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	50%	X									
695	Liriodendron tulipifera	Yellow-poplar	19"	19'	75%	70%	X									
696	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	55%	X								X	
697	Liriodendron tulipifera	Yellow-poplar	16"	16'	75%	75%	X								X	
698	Acer rubrum	Red maple	12"	12'	80%	50%		X	X		X	X				
699	Liriodendron tulipifera	Yellow-poplar	14"	14'	75%	40%		X	X			X				
700	Acer rubrum	Red maple	8"	8'	80%	60%		X	X			X				
701	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	70%		X	X							
702	Liriodendron tulipifera	Yellow-poplar	16"	16'	75%	70%		X	X							
705	Pinus virginiana	Virginia pine	20"	20'	65%	65%		X	X		X					
716	Dead		7"				X								X	
717	Liriodendron tulipifera	Yellow-poplar	15"	15'	75%	70%		X	X							
718	Pinus virginiana	Virginia pine	10"	10'	65%	60%		X	X							
719	Acer rubrum	Red maple	7"	8"	80%	70%		X	X							
720	Pinus virginiana	Virginia pine	16"	16'	65%	60%		X	X		X	X				
721	Pinus virginiana	Virginia pine	11"	11'	65%	60%		X	X							
722	Pinus virginiana	Virginia pine	10"	10'	65%	50%	X								X	
723	Pinus virginiana	Virginia pine	17"	17'	0%	0%	X								X	
724	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	55%		X	X							
725	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	45%		X	X							
726	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	10%		X	X							
728	Carya glabra	Pignut hickory	8"	8'	80%	60%		X	X							
729	Liriodendron tulipifera	Yellow-poplar	14"	14'	75%	50%		X	X							
730	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	50%		X	X							
789	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	80%		X	X							
790	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	65%		X	X							
791			11"	11'				X	X			X				
792	Liriodendron tulipifera	Yellow-poplar	9"		75%	50%		X	X			X				
793	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	65%	X								X	
794	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	65%	X								X	
795	Liriodendron tulipifera	Yellow-poplar	7"	8'	75%	65%	X								X	
796	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	65%		X	X			X				
797	Dead		6"	0'	75%		X									
798	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	70%		X	X			X				
799	Liriodendron tulipifera	Yellow-poplar	15"	15'	75%	65%		X	X			X				
801	Quercus rubra	Red Oak	7"	8'	75%	55%		X	X			X				

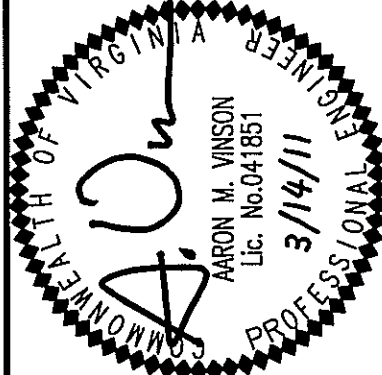
Tree Inventory																	
Tree #	Botanical Name		Common Name	Size	Critical Root Zone (CRZ)	Species Rating	Condition %	Removal	Activities								Notes
									Tree Protection Fence	Mulch	Fertilize	Crown Clean - remove dead and diseased limbs over 1" cal	Root Prune	Remove Vines	Treat Pests	Hand Removal	
	Genus - Species			DBH	Radius (ft)												
Tree Survey Information Completed by: Walter Phillips, Inc. - Arborist John L. Gavarkavich - ISA # MA-4728A																	
810	Carya ovata	Shagbark hickory	15"	15'	75%	65%			X	X			X				
811	Carya ovata	Shagbark hickory	23"	23'	75%	65%			X	X			X				
814	Nyssa sylvatica	Blackgum	8"	8'	75%	45%			X	X			X				
815	Fagus grandifolia	American beech	11"	11'	75%	55%			X	X			X				
818	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	70%			X	X			X				
823	Liquidambar styraciflua	Sweetgum	12"	12'	75%	70%			X	X			X				
824	Carya glabra	Pignut hickory	9"	9'	80%	70%			X	X			X				
825	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	65%			X	X		X	X				
826	Liriodendron tulipifera	Yellow-poplar	18"	18'	75%	70%			X	X			X				
827	Dead		10"	10'	0%	0%		X							X	Retain as tree snag - remove top and leave large stump.	
828	Quercus rubra	Northern red oak	10"	10'	75%	70%			X	X		X	X				
829	Nyssa sylvatica	Blackgum	8"	8'	75%	45%			X							Offsite	
830	Fagus grandifolia	American beech	13"	13'	85%	80%			X			X	X				
831	Quercus alba	White Oak	8"	8'	85%	70%		X								X	
832	Carya glabra	Pignut hickory	11"	11'	80%	65%			X								
833	Carya glabra	Pignut hickory	9"	9'	80%	80%			X				X			Offsite	
834	Nyssa sylvatica	Blackgum	10"	10'	70%	70%			X				X			Offsite	
835	Liquidambar styraciflua	Sweetgum	9"	9'	70%	70%		X									
836	Liquidambar styraciflua	Sweetgum	7"	8'	70%	70%		X									
837	Quercus rubra	Northern red oak	30"	45'	70%	50%		X									
838	Fagus grandifolia	American beech	10"	10'	70%	50%		X									
841	Liriodendron tulipifera	Yellow-poplar	14"	14'	75%	70%		X									
842	Liriodendron tulipifera	Yellow-poplar	18"	18'	75%	70%		X									
843	Fagus grandifolia	American beech	8"	8'	85%	70%		X									
844	Pinus virginiana	Virginia pine	10"	10'	65%	20%		X									
845	Pinus virginiana	Virginia pine	13"	13'	65%	50%		X									
846	Liriodendron tulipifera	Yellow-poplar	16"	16'	75%	70%		X									
847	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	65%		X									
848	Liriodendron tulipifera	Yellow-poplar	12"	12'	75%	40%		X									
849	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	55%		X									
850	Fagus grandifolia	American beech	9"	9"	85%	65%		X									
851	Liriodendron tulipifera	Yellow-poplar	17"	17'	75%	60%		X									
852	Liriodendron tulipifera	Yellow-poplar	15"	15'	75%	70%		X									
853	Liriodendron tulipifera	Yellow-poplar	18"	18'	75%	45%		X									
854	Liriodendron tulipifera	Yellow-poplar	13"	13'	75%	70%		X									
855	Pinus virginiana	Virginia pine	19"	19'	65%	70%		X									
856	Pinus virginiana	Virginia pine	15"	15'	65%	70%		X									
857	Acer rubrum	Red maple	8"	8"	80%	50%		X									
858	Pinus virginiana	Virginia pine	18"	18'	65%	10%		X									
859	Acer rubrum	Red maple	8"	8"	80%	55%		X									
860	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	50%		X									
861	Pinus virginiana	Virginia pine	12"	12'	0%	0%		X									
862	Acer rubrum	Red maple	15"	15"	80%	60%		X									
863	Pinus virginiana	Virginia pine	17"	17'	65%	60%		X									
866	Liriodendron tulipifera	Yellow-poplar	14"	14'	75%	70%		X									
867	Liriodendron tulipifera	Yellow-poplar	11"	11'	75%	60%		X									
868	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	65%		X									
869	Acer rubrum	Red maple	13"	13"	80%	60%		X									
870	Liriodendron tulipifera	Yellow-poplar	7"	8'	75%	55%		X									
871	Liriodendron tulipifera	Yellow-poplar	19"	19'	75%	45%		X									
872	Liriodendron tulipifera	Yellow-poplar	8"	8'	75%	45%		X									
873	Acer rubrum	Red maple	9"	9"	80%	50%		X									
875	Liriodendron tulipifera	Yellow-poplar	9"	9'	75%	60%		X									
876	Liriodendron tulipifera	Yellow-poplar	10"	10'	75%	55%		X									
893	Liquidambar styraciflua	Sweetgum	13"	13'	75%	60%		X									
911	Pinus virginiana	Virginia pine	12"	12'	75%	60%		X									
912	Pinus virginiana	Virginia pine	11"	11'	75%	60%			X				X			Offsite	
913	Fagus grandifolia	American beech	7"	8'	75%	65%		X									
914	Fagus grandifolia	American beech	7"	8'	75%	65%		X									

Application No. **RZ/EDP 2010-LE-018** Staff **S.W.**
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
See Proffers, Dated June 24, 2011
Date of (PC) **June 16, 2011** (BOS) Approval **July 26, 2011**
Sheet **9** of **12**

DBH = Diameter at Breast Height (measured 4.5 feet above ground)
CRZ = Critical Root Zone = 1 foot radius per inch of tree diameter, trees over 30" DBH = 1.5 foot radius per inch of tree diameter
CRZ values for trees with multiple stems were calculated using the diameter of a tree with the basal area equivalent to the sum of the basal areas for all stems.
Condition Ratings provided as percentages based on methods outlined in the 9th edition of the Guide for Plant Appraisal, published by the I.S.A.
Crown Clean Pruning - Remove all dead, dying, and diseased limbs 1" in diameter and larger, measured at the point of attachment.
Mulching - Chips or shredded hardwood mulch shall be placed in tree preservation area to a maximum depth of 4" along the limits of clearing and grading to a maximum depth of 10" into the preserved areas.
Mulch within protected areas without the use of motorized equipment (ie, use wheelbarrows) and will be distributed manually.

TREE INVENTORY

7309 HAYFIELD ROAD
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA



WALTER L. PHILLIPS
 INCORPORATED
 ENGINEERS • SURVEYORS • PLANNERS
 LANDSCAPE ARCHITECTS • ARBORISTS
 207 PARK AVENUE
 FALLS CHURCH, VIRGINIA 22046
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 www.WLPINC.com

STORMWATER MANAGEMENT SUMMARY

1. TOTAL PRE-DEVELOPMENT

- A. TOTAL SITE AREA = 3.95 AC
B. WEIGHTED "C" = 0.21 AND "C10" = 0.31
PERVIOUS AREA (LANDSCAPED AREA)= 3.87 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.03 AC
SEMI-PERVIOUS AREA (GRAVEL) = 0.04 AC
AVG C2 = $[(3.87 \times 0.2) + (0.03 \times 0.9) + (0.04 \times 0.9)] / 3.95 = 0.21$
AVG C10 = $[(3.87 \times 0.3) + (0.03 \times 0.9) + (0.04 \times 0.9)] / 3.95 = 0.31$

C. TIME OF CONCENTRATION = 5 MIN

- D. RUNOFF: Q2 = $3.95 \times 5.45 \times 0.21 = 4.52$ CFS
Q10 = $3.95 \times 7.27 \times 0.31 = 8.90$ CFS

2. TOTAL POST-DEVELOPMENT (NO DETENTION/INFILTRATION)

- A. TOTAL SITE AREA = 3.95 AC
B. WEIGHTED "C" = 0.47

PERVIOUS AREA (LANDSCAPED AREA)= 2.85 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 1.10 AC
AVG C = $[(2.85 \times 0.3) + (1.10 \times 0.9)] / 3.95 = 0.47$

C. TIME OF CONCENTRATION = 5 MIN

- D. RUNOFF: Q2 = $3.95 \times 5.45 \times 0.47 = 10.12$ CFS
Q10 = $3.95 \times 7.27 \times 0.47 = 13.50$ CFS

2A. POST-DEVELOPMENT, ON-SITE UNDETAINED

- A. TOTAL SITE AREA = 2.69 AC
B. WEIGHTED "C" = 0.38

PERVIOUS AREA (LANDSCAPED AREA)= 2.34 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.35 AC
AVG C = $[(2.34 \times 0.3) + (0.35 \times 0.9)] / 2.69 = 0.38$

C. TIME OF CONCENTRATION = 5 MIN

- D. RUNOFF: Q2 = $2.69 \times 5.45 \times 0.38 = 5.57$ CFS
Q10 = $2.69 \times 7.27 \times 0.38 = 7.43$ CFS

2B. POST-DEVELOPMENT, ON-SITE DETAINED FACILITY #1

- A. TOTAL SITE AREA = 0.34 AC
B. WEIGHTED "C" = 0.71

PERVIOUS AREA (LANDSCAPED AREA)= 0.11 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.23 AC
AVG C = $[(0.11 \times 0.3) + (0.23 \times 0.9)] / 0.34 = 0.71$

C. TIME OF CONCENTRATION = 5 MIN

- D. RUNOFF: Q2 = $0.34 \times 5.45 \times 0.71 = 1.32$ CFS
Q10 = $0.34 \times 7.27 \times 0.71 = 1.75$ CFS

2C. POST-DEVELOPMENT, OFF-SITE DETAINED FACILITY #1

- A. TOTAL SITE AREA = 0.05 AC
B. WEIGHTED "C" = 0.30

PERVIOUS AREA (LANDSCAPED AREA)= 0.05 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.00 AC
AVG C = $[(0.05 \times 0.3) + (0.00 \times 0.9)] / 0.05 = 0.30$

C. TIME OF CONCENTRATION = 5 MIN

- D. RUNOFF: Q2 = $0.05 \times 5.45 \times 0.30 = 0.08$ CFS
Q10 = $0.05 \times 7.27 \times 0.30 = 0.11$ CFS

2D. POST-DEVELOPMENT, ON-SITE DETAINED FACILITY #2

- A. TOTAL SITE AREA = 0.92 AC
B. WEIGHTED "C" = 0.63

PERVIOUS AREA (LANDSCAPED AREA)= 0.42 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.50 AC
AVG C = $[(0.42 \times 0.3) + (0.50 \times 0.9)] / 0.92 = 0.63$

C. TIME OF CONCENTRATION = 5 MIN

- Q2 = $0.92 \times 5.45 \times 0.63 = 3.16$ CFS
Q10 = $0.92 \times 7.27 \times 0.63 = 4.21$ CFS

2E. POST-DEVELOPMENT, OFF-SITE DETAINED FACILITY #2

- A. TOTAL SITE AREA = 0.97 AC
B. WEIGHTED "C" = 0.44

PERVIOUS AREA (LANDSCAPED AREA)= 0.74 AC
IMPERVIOUS AREA (ROOF, SIDEWALK, PAVEMENT) = 0.23 AC
AVG C = $[(0.74 \times 0.3) + (0.23 \times 0.9)] / 0.97 = 0.44$

C. TIME OF CONCENTRATION = 5 MIN

- Q2 = $0.97 \times 5.45 \times 0.44 = 2.33$ CFS
Q10 = $0.97 \times 7.27 \times 0.44 = 3.10$ CFS

3. TOTAL DRAINAGE TO FACILITY #1

- A. RUNOFF: Q2 = $0.08 + 1.32 = 1.40$ CFS
Q10 = $0.11 + 1.75 = 1.86$ CFS

4. TOTAL DRAINAGE TO FACILITY #2

- A. RUNOFF: Q2 = $2.33 + 3.16 = 5.49$ CFS
Q10 = $3.10 + 4.21 = 7.31$ CFS

5. ALLOWABLE MAX RELEASE RATE FROM SITE

- A. QMAX REL. = QPRE - Q(POST UNDETAINED)
Q2 = 4.52 CFS - 5.57 CFS = -1.05 CFS
Q10 = 8.90 CFS - 7.43 CFS = 1.47 CFS

BEST MANAGEMENT PRACTICES COMPUTATIONS

II. WATERSHED INFORMATION

PART 1: LIST ALL OF THE SUBAREAS AND "C" FACTORS USED IN THE BMP COMPUTATIONS

SUBAREA DESIGNATION AND DESCRIPTION	"C"	ACRES
(1)	(3)	(3)
A ₁ ON-SITE UNDETAINED	$1.02(0.30)+0.30(0.90) = 1.32$	1.32
A ₂ ON-SITE DETAINED FACILITY 1	$0.11(0.30)+0.23(0.90) = 0.34$	0.34
A ₃ OFF-SITE DETAINED FACILITY 1	$0.05(0.30)+0.00(0.90) = 0.05$	0.05(x0.2)
A ₄ ON-SITE DETAINED FACILITY 2	$0.42(0.30)+0.50(0.90) = 0.92$	0.92
A ₅ OFF-SITE DETAINED FACILITY 2	$0.74(0.30)+0.23(0.90) = 0.97$	0.97(x0.2)
A ₆ ON-SITE OPEN SPACE FOR BMP CREDIT	$1.37(.30)+0.00(.90) = 1.37$	1.37
(a) TOTAL		4.15 *

*4.15 AC TO BE USED FOR OFF-SITE AREAS. 3.95 AC TO BE USED FOR ON-SITE AREAS.

PART 2: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR THE SITE

(A)	AREA OF THE SITE	(a) <u>4.15</u> ACRES		
(B)	SUBAREA DESIGNATION	"C"	ACRES	PRODUCT
	(1)	(2)	(3)	(4)
A ₁	ON-SITE UNDETAINED	0.44 x	1.32	= 0.58
A ₂	ON-SITE DETAINED FACILITY 1	0.71 x	0.34	= 0.24
A ₃	OFF-SITE DETAINED FACILITY 1	0.30 x	0.05(x0.2)	= 0.01
A ₄	ON-SITE DETAINED FACILITY 2	0.63 x	0.92	= 0.58
A ₅	OFF-SITE DETAINED FACILITY 2	0.44 x	0.97(x0.2)	= 0.09
A ₆	ON-SITE OPEN SPACE FOR BMP CREDIT	0.30 x	1.37	= 0.41

(b) TOTAL = 1.91

(b)/(a) = 0.46

(C) WEIGHTED AVERAGE "C" FACTOR

PART 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE *

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFF. (%)	AREA RATIO	"C" FACTOR RATIO	PRODUCT
(1)	(2)	(3)	(4)	(5)	(6)
A ₂ ON-SITE DETAINED FACILITY #1		50	x 0.34/3.95	x 0.71/0.46	= 6.64%
A ₃ OFF-SITE DETAINED FACILITY #1		50	x 0.05(x0.2)/4.15	x 0.30/0.46	= 0.08% **
A ₄ ON-SITE DETAINED FACILITY #2		50	x 0.92/3.95	x 0.63/0.46	= 15.95%
A ₅ OFF-SITE DETAINED FACILITY #2		50	x 0.97(x0.2)/4.15	x 0.44/0.46	= 2.24% **
A ₆ ON-SITE OPEN SPACE FOR BMP CREDIT		100	x 1.37/3.95	x 0.30/0.46	= 22.6%
(a) TOTAL =					47.51% ***

PART 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

- (A) SELECT REQUIREMENT (a) 40%

* CHESAPEAKE BAY PRESERVATION AREA (NEW DEVELOPMENT) =	40%
--	-----

- (B) IF LINE 3(a) 47.51% > LINE 4(a) 40% THEN PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED
***CALCULATIONS ARE PRELIMINARY AND SUBJECT TO ADJUSTMENT AT TIME OF SITE PLAN

STORMWATER MANAGEMENT CHECKLIST

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:
Special Permits (9-011 2J & 2L) Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-015 1G & 1N) Commercial Revitalization Districts (9-022 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L) PRC Plan (16-303 1E & 1O)
FDP P Districts (except PRC) (16-502 1F & 1Q) Amendments (16-202 10F & 10I)

- ☒ 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- ☒ 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 3.
- ☒ 3. Provide:
Facility Name/ Type & No. On-site area served (acres) Off-site area served (acres) Drainage area (acres) Footprint area (sf) Storage Volume (cf) If pond, dam height (ft)
INFILTRATION #1 0.34 0.05 0.39 1,500 4,500 N/A
INFILTRATION #2 0.92 0.97 1.89 2,500 20,000 N/A
Totals
- ☒ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 3.
Pond inlet and outlet pipe systems are shown on Sheet N/A.
- ☒ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet N/A.
Type of maintenance access road surface noted on the plat is N/A (asphalt, gravel, etc.).
- ☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 4-8.
- ☒ 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 9.
- ☒ 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 9.
- ☒ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 9.
- ☒ 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 2.
- ☒ 11. A submission waiver is requested for UNDERGROUND DETENTION FOR RESIDENTIAL DEVELOPMENT
- ☐ 12. Stormwater management is not required because N/A.

OUTFALL ANALYSIS MAP



OUTFALL ANALYSIS NARRATIVE

AS IT EXISTS TODAY, THE SITE IS PRIMARILY WOODED WITH ONE SINGLE FAMILY HOME AND SOME LAWN AREA. A SIGNIFICANT AMOUNT OF STORMWATER RUNOFF SHEET FLOWS WEST TO AN EXISTING STREAM. THE REMAINING STORMWATER RUNOFF LEAVES THE SITE VIA OVERLAND FLOW TO HAYFIELD ROAD, WHERE IT DRAINS TO AN EXISTING INLET WHICH DISCHARGES INTO DEAD RUN.

THE PROPOSED DEVELOPMENT WILL HONOR EXISTING DRAINAGE DIVIDES AND WILL CONNECT TO THE SAME EXISTING INLET IN HAYFIELD ROAD. STORMWATER DETENTION WILL BE PROVIDED TO MITIGATE FOR INCREASE IN IMPERVIOUS AREA; THEREFORE THE PEAK VOLUME OF STORMWATER RUNOFF LEAVING THE SITE WILL BE AT OR BELOW PRE-DEVELOPMENT LEVELS.

THE DEVELOPMENT AREA OF THE SITE IS APPROXIMATELY 2.46 ACRES. THE TOTAL CONTRIBUTING DRAINAGE AREA AT THE ANTICIPATED POINT OF DISCHARGE IS APPROXIMATELY 264 ACRES. AT THE POINT OF DISCHARGE, THE EXISTING DEAD RUN CHANNEL CONTAINS DEFINED BED AND BANKS. IN ACCORDANCE WITH SECTION 3-0203.2B OF THE PUBLIC FACILITIES MANUAL, THIS IS THE EXTENT OF REVIEW.

IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THIS PROJECT IS SERVED BY AN ADEQUATE OUTFALL BECAUSE THE CONTRIBUTING DRAINAGE AREA IS 100 TIMES THE DEVELOPMENT AREA, AND A CHANNEL WITH DEFINED BED AND BANKS EXISTS AT THE ANTICIPATED DISCHARGE POINT. NO ADVERSE IMPACTS TO DOWNSTREAM STRUCTURES IS ANTICIPATED AS A RESULT OF THIS DEVELOPMENT.

OVERLAND RELIEF NARRATIVE

IN THE EVENT THAT STORM SEWERS OR OTHER STORMWATER CONVEYANCES BECOME BLOCKED OR THE AMOUNT OF RUNOFF EXCEEDS CAPACITY, RUNOFF WILL LEAVE THE SITE VIA SHEET FLOW IN TWO PRIMARY ROUTES. THE MAJORITY OF THE SITE WILL DRAIN OVERLAND TO DEAD RUN, WHICH RUNS NORTH TO SOUTH ALONG THE REAR OF THE PROPERTY. PORTIONS OF THE SITE WILL DRAIN OVERLAND INTO HAYFIELD ROAD, WHERE IT WILL DRAIN TO STORM SEWER INLETS OR POND UNTIL IT FLOWS OVER THE CURB AND THEN FLOWS OVERLAND INTO DEAD RUN.

IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THE OVERLAND RELIEF PATH FOR THIS PROPERTY IS ADEQUATE AND NO ADVERSE IMPACT TO DOWNSTREAM STRUCTURES IS ANTICIPATED.

STORMWATER MANAGEMENT NARRATIVE

TODAY THE EXISTING SITE IS PRIMARILY WOODED WITH SMALL AREAS OF LAWN AND DEVELOPED AREA. AS SHOWN ON THIS SHEET, THE PRE-DEVELOPMENT IMPERVIOUS AREA IS APPROXIMATELY 0.07 ACRES, RESULTING IN A WEIGHTED C-FACTOR OF 0.21 FOR 2-YEAR STORM AND 0.31 FOR 10-YEAR STORM. THE PRE-DEVELOPMENT RUNOFF FOR THE SITE IS 4.52 CFS FOR THE 2-YEAR STORM AND 8.90 CFS FOR THE 10-YEAR STORM.

THE PROPOSED DEVELOPMENT WILL ADD ROAD, DRIVEWAYS, SIDEWALKS, HOUSES, AND OTHER IMPERVIOUS SURFACES, RESULTING IN AN INCREASE IN IMPERVIOUS AREA FROM 0.07 ACRES TO APPROXIMATELY 1.10 ACRES. THE POST-DEVELOPMENT WEIGHTED C-FACTOR WILL BE APPROXIMATELY 0.47. THE POST-DEVELOPMENT RUNOFF FOR THE SITE WILL BE APPROXIMATELY 10.12 CFS FOR THE 2-YEAR STORM AND 13.50 CFS FOR THE 10-YEAR STORM.

IN ORDER TO REDUCE POST-DEVELOPMENT STORMWATER RUNOFF TO PRE-DEVELOPMENT LEVELS, DETENTION WILL BE PROVIDED IN THE FORM OF INFILTRATION FACILITIES. INFILTRATION FACILITY #1 WILL BE LOCATED AT THE NORTH END OF THE DEVELOPMENT; INFILTRATION FACILITY #2 WILL BE LOCATED AT THE SOUTH END OF THE DEVELOPMENT ALONG THE SITE'S HAYFIELD ROAD FRONTAGE. APPROXIMATE SIZE AND LOCATION OF THESE FACILITIES IS SHOWN ON THE CONCEPTUAL/FINAL DEVELOPMENT PLAN ON SHEET 3. RUNOFF WILL ENTER INFILTRATION FACILITY #1 VIA A COMBINATION OF OVERLAND FLOW THROUGH A PERMEABLE PAVER SYSTEM AND PIPE FLOW. RUNOFF WILL ENTER INFILTRATION FACILITY #2 VIA OVERLAND FLOW FROM THE PRIVATE ROAD. THE SOILS FOR THE SITE AS SHOWN ON THE FAIRFAX COUNTY SOILS MAP ARE CONSIDERED FAIR TO MARGINAL FOR INFILTRATION. SOIL TESTS PERFORMED ON THE SITE PREVIOUSLY INDICATE THAT INFILTRATION IS SUITABLE. UPDATED PERCOLATION TESTS HAVE BEEN CONDUCTED IN ACCORDANCE WITH TECHNICAL MEMO 10-4. THREE TESTS HAVE CONFIRMED THAT INFILTRATION REMAINS SUITABLE. THE PROPOSED FACILITIES HAVE BEEN PRELIMINARILY SIZED TO DETAIN THE ENTIRE 10 YEAR STORM. LOCATION AND SIZES OF THESE FACILITIES ARE PRELIMINARY AND SUBJECT TO ADJUSTMENT AT TIME OF SITE PLAN. THE APPLICANT RESERVES THE RIGHT TO USE STRUCTURAL INFILTRATION FACILITIES SUCH AS RAINTANK OR SIMILAR IN LIEU OF GRAVEL INFILTRATION.

BEST MANAGEMENT PRACTICES NARRATIVE

THIS PROJECT WILL BE CONSIDERED DEVELOPMENT AND IS NOT LOCATED IN THE OCCOQUAN WATERSHED. AS SUCH, THE PHOSPHORUS REMOVAL REQUIREMENT FOR THIS DEVELOPMENT IS 40%. THIS REQUIREMENT WILL BE MET THROUGH THE USE OF A CONSERVATION EASEMENT ON THE WEST AND NORTH SIDES OF THE SITE AND TWO INFILTRATION FACILITIES. AS DEMONSTRATED BY THE BMP COMPUTATIONS PROVIDED ON THIS SHEET, THE COMBINATION OF THOSE FACILITIES WILL PROVIDE PHOSPHORUS REMOVAL IN EXCESS OF THE MINIMUM REQUIREMENT.

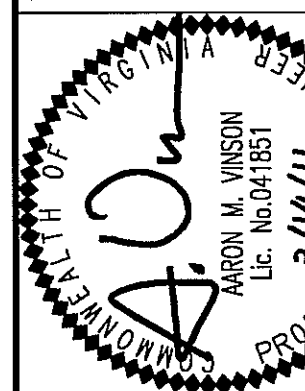
Application No. RZ/FDP 2010-LE-018 Staff S.W.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
See Proffers Dated June 24, 2011
Date of (PC) June 16, 2011 (BOS) Approval July 26, 2011
Sheet 11 of 12

UNDERGROUND DETENTION WILL BE PROVIDED VIA INFILTRATION FACILITIES #1 AND #2 TO REDUCE POST-DEVELOPMENT RUNOFF TO PRE-DEVELOPMENT LEVELS. APPLICATION RESERVES RIGHT TO USE STRUCTURAL SYSTEM SUCH AS RAINTANK OR SIMILAR IN LIEU OF GRAVEL INFILTRATION.

PRELIMINARY STORMWATER MANAGEMENT / BEST MANAGEMENT PRACTICES / OUTFALL ANALYSIS

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WALTER L. PHILLIPS
INCORPORATED
ESTABLISHED 1945
DATE: 9/27/10; REV. 12/03/10; 3/14/11
SCALE: 1"=30'



REVISION APPROVED BY	DATE	APPROVED	DATE	DESCRIPTION
NO.	DATE	REV. BY	DATE	DESCRIPTION

7309 HAYFIELD ROAD

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

